A new model of undergraduate clinical education?

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Published in:
British Journal of General Practice

DOI:
10.3399/bjgp18X695885

Publication date:
2018

Document Version
Peer reviewed version

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A new model of undergraduate clinical education

In UK medical schools there is a growing interest in a new model of undergraduate medical education; the Longitudinal Integrated Clerkship (LIC). In this model, the central principles are continuity, integration, and longitudinality[1, 2]; students participate in '*the comprehensive care of patients over time*[3]',continuing learning relationships with patients' clinicians and meet the majority of the core curricular competencies across multiple disciplines simultaneously[1] by focusing on patients rather than morbidity categorised by specialty.

The Longitudinal Integrated Clerkship model

The model grew out of initiatives to address rural medical workforce shortages in the USA in the 1970s and spread through the 1980s to Australia, Canada and South Africa. There is now a variety of different models worldwide with a median length of 40 weeks[4] and most are based in primary care.

In a LIC, students follow a group of patients through episodes of care wherever they take place. Their initial encounters with these patients take place in a variety of settings throughout the clerkships; some in primary care, some in emergency departments or acute assessment units and some in outpatient clinics. Educational supervisors help them develop a diverse patient group so that their learning is broad and meets the requirements of the curriculum.

LIC students perform at least as well and often better than those in more traditional curricula. Their consultation skills are well-developed, they understand more about the psychosocial aspects of medicine, take on more responsibility for patients and have more confidence in dealing with ethical issues[5].

The educational benefits

Continuity of relationships with clinical teachers and patients is consistently quoted as the reason why LICs are effective in promoting learning[6]. Participation in the care of patients over time has benefits for students as a result of the social aspects of having a role[7,8] within a community of practice. Continuity of relationships with clinicians means that students receive tailored feedback from teachers who know them and are invested in their progress as a result. Learning is built on shared development of knowledge between students, patients and clinicians , and there may be positive impacts on students' resilience because of the strength and continuity of these relationships [9].

LICs have reversed the erosion of students' empathy and patient-centredness that takes place during medical training and this benefit endured after graduation[10]. This may be attributed to the effects of relational learning; students' connections with patients lead to a powerful sense of duty to them. Alongside this, there is greater acknowledgement of patients as experts in their own experiences of illness and disease rather than being seen as passive tools for learning; this sense of connectedness to, and advocacy for, individual patients may enhance the development of a professional identity based on 'an ethic of care'[11]. Because students are involved in the care of patients, their learning is

linked to individuals and as a result tends to be more focused and self-directed; students must seek out opportunities for relevant learning rather than simply attend sessions laid on for them.

LICs contribute to the development of clinical reasoning because of opportunities to observe the variability of patient presentations, the effects of context and opportunities to witness the consequences of a variety of clinical decisions over time and their impacts on outcomes for patients[2].

From a cognitive perspective, learning works better if there is integration of new material across categories rather than it being separated into discrete blocks. By focusing learning on patients, this integration happens naturally and is augmented as a result of relationships (the social aspects of learning). As well as this, there may be benefits on retention of learning over the year as students are not being exposed to a clinical specialty for a few weeks and then moving on to a new one; learning in each specialty continues over the whole LIC period.

Clinical teachers report greater levels of satisfaction from teaching LIC students as a result of observing their development over time, and greater levels of personal interest in and responsibility for students' learning[12] .

Patients report satisfaction with longer term relationships with students, and value contributing to their education[13].

The UK context

The educational benefits of LICs are compelling, but of particular interest here in the UK at this time of concern about the GP workforce and changes in the NHS towards more community based care, is their influence on students' choices towards community based careers [5,14].

In Scotland, with its particular problems of GP recruitment to rural and remote practices, the success of LICs internationally has made this model of teaching an obvious one to consider. As well as the benefits arising from students experience of relational learning while embedded in rural or remote communities, engaging practices which were previously too remote from medical schools to be able to teach may increase the attractiveness of those practices as places in which clinical staff want to work.

The report '*By Choice not by Chance'*[15], which seeks to address the issue of recruitment of medical graduates to GP careers, recommends that students are provided with opportunities to experience the 'depths and breadth of general practice'; LICs do this effectively by immersing them in practice over time.

The changing NHS in the UK means that medical schools need to consider how well their graduates are prepared for future practice. LICs are strongly aligned with initiatives such as the *Year of Care*[16] which looks at new ways of providing care for people with multiple long term conditions (moving away from single disease and acute care models) and both Scotland's *Realistic Medicine*[17] agenda and the RCGP's vision *The 2022 GP*[18] which promote more personalized care based in the community and delivered by medical generalists.

LICs in the UK

Earlier this year, a group with representatives from the majority of the UK's medical schools met to share ideas and it was clear that many were introducing placements based on LIC principles into their curricula.

Dundee School of Medicine is the first UK medical school to have introduced a comprehensive[4] LIC lasting for a whole academic year. A pilot scheme, based in primary care, is currently in its second

year; up to ten students volunteer to participate for the fourth year of the MBChB programme. They are placed in practices in NHS Highland and NHS Dumfries and Galloway, and hospitals in Inverness, Fort William and Dumfries. Students contribute to the care of patients in the practices for three days of each week and spend the other two days in secondary care, following their patients to outpatient appointments, investigations and hospital based treatment, and learning from their patients' clinicians. They also work with Third Sector organisations in their communities.

Student feedback is positive; they value being given *'ownership of learning'* and one described the LIC as *'adult learning in a nutshell.'* They recognized that continuity of care leads to a clearer appreciation of patients and their problems in context: *'[LIC is] the whole story, the whole big picture of the patient'* and described experiencing *'the buzz of realistic medicine.'*

Students value their relationships with the healthcare teams and patients; *'the practice has been fantastic…every member of staff engaging, keen for me to learn, and support from patients'* and recognized the benefits of extended relationships with clinical teachers; *'continuity of assessment means that you get better feedback...'.* A sense of immersion in the community contributes to the overall experience. Students perceive that following patients over time and a range of specialties brings reality to their learning.

Of course, there are challenges in establishing a LIC in the UK; the Dundee experience is that following patients into secondary care can be challenging and has been hampered at times by the length of time between referral and clinic appointments. Concerns about capacity for teaching in both general practice and secondary care have implications for offering the LIC to larger groups of students, and as in other models internationally, it may need to continue to be offered to a small number who have a particular interest in rural practice. Careful collaborative working is needed with all clinicians to make sure that the principles of LIC-based learning are understood and can be enacted within the current health service environment.

It seems likely that more UK medical schools will adopt the LIC model to some extent, with adaptations for the UK context, for part of their undergraduate programmes and therefore that more practices will be needed to host students. Evidence suggests that GP teachers derive great satisfaction from longitudinal relationships with students and that this model of teaching and learning might reap rewards in terms of recruitment to GP careers. For those students who do not choose a GP career, the LIC experience is likely to enhance a generalist approach to their practice of medicine, whatever their chosen specialty. Hopefully, LICs will also start to chip away at the primary/secondary care barrier as students focus their learning on their patients' needs and experiences by following them as they move between the two settings.

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